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ABSTRACT

The three papers in this report relate to the development and activities of the University of the West Indies Distance Teaching Project (UWIDITE), through which the University of the West Indies (UWI) is continuing experiments on the use of telecommunications to extend its regional services. A report to the advisory council, the first paper, summarizes the UWIDITE Project to date and discusses preliminary studies that led to recommendations for a small system to be used for inservice teacher training for challenge examinations, agricultural extension, and health training. Discussion of UWIDITE covers funding, objectives, initial programs, present status, equipment, maintenance, training, technical assistance, evaluation, present network uses, programs being prepared, project administration, advisory committee, conclusions, and suggestions. The second paper, "Developing Study Guides and Workbooks for Programs," lists UWIDITE program development services, and provides guidelines for the preparation of student materials for distance teaching programs. These guidelines suggest inclusion of a general introduction and course introduction, and suggest course development techniques. The third paper, "Interactive Distance Teaching," is a synopsis of strategies to make effective use of interactive audio through humanizing the experience and grouping the participants, preparation of course materials, encouraging discussion, and making listening easier. (LMM)

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THE UNIVERSITY OF THE WEST INDIES DISTANCE TEACHING PROJECT

REPORT TO ADVISORY COUNCIL

GERALD C. LALOR, Project Director

The University of the West Indies is continuing its experiments on the use of telecommunications to extend its services in the region.

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PROJECT SATELLITE

These investigations began in 1978 with Project Satellite in which for two months the Mona and Cave Hill Campuses were linked by television via two NASA satellites. The University Centre in St. Lucia joined in for the final two weeks during which two major seminars both centred in St. Lucia were held.

Project Satellite televised various demonstrations, teleconferences, lectures, and outreach programmes; in medicine, agriculture, engineering, energy and education. There were also two extra regional programmes: an energy seminar with the Solar Energy Research Institute in Colorado, U.S.A., and a teleconference between participants in Mona and Cave Hill and others across the Pacific Basin from California to New Zealand. The Project Satellite report recommended a feasibility study for a permanent system.

CARCOST

The above recommendation led to a grant of US$330,000 from USAID for the Caribbean Regional Communications Study (CARCOST) which ended on March 31, 1982. CARCOST examined the feasibility of a U.W.I. communications network to be used for administration, distance teaching, and outreach programmes. The study included demonstrations on slow-scan television, facsimile transmission of documents and an actual two month long experiment in Jamaica in distance teaching by telephone which was enthusiastically received.

A preliminary draft report of the CARCOST study was discussed with Ministers of Education or their representatives as early as February 1981. This meeting recommended that discussions should begin urgently on putting a small system in place to be used particularly for in-service training for Challenge Examinations, Agricultural Extension and Health Training.

The Conference of Ministers responsible for Health held in Belize, July 14-16, 1981, received a report on the University's efforts as they related to health and in their Resolution No. 14 gave full support to the establishment of a Telemedicine project and to efforts by UWI to raise the funding required from International agencies.

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The CARCOST report recommended a five year pilot with particular emphasis on teaching for the Challenge Examinations, In-service Teacher Training, Medical and Agricultural applications, the supervision of postgraduate students and University administration. The Caribbean Examinations Council and other regional bodies were also invited to consider using the system.

The report emphasized, however, that the proper use of the teleconferencing techniques is posited on the simultaneous development of other aspects of educational technology, e.g. the use of print media, graphics, audio, and audio- visual material, which would themselves help teaching at the University and other educational levels in the region.

UWI DISTANCE TEACHING EXPERIMENT

The major recommendation of the CARCOST study was for the five year long pilot project. To support this study the following funds have been identified. USAID agreed to: (1) US$600,000 over a 3 year period beginning in May 1982, to provide salaries and other support (2) about US$220,000 for the communications costs over a period of two years and unspecified costs for technical assistance and training. The Commonwealth Association of Science has provided L99,000 over three years to support specifically a programme of training for secondary school technicians and science teachers.

OBJECTIVES OF UWIDITE

UWIDITE seeks to:

(1) demonstrate that a sufficient level of actual demand exists to support an operational system;

(2) create within UWI an interest towards meeting identified demands by teleconferencing techniques, so that the institution will incorporate these as part of its armoury;

(3) establish a core of experience and of experienced workers to allow the efficient design, staffing and implementation of an operational system for distance teaching and outreach;

(4) help to develop mechanisms and expertise for the production of educational materials e.g. print, audio, and audio-visual materials;

(5) develop a proposal for a permanent service.

INITIAL PROGRAMMES

UWIDITE is developing services which include:

(1) Extension Studies (teaching for credits towards a University degree):

(a) Support for the Challenge Examinations System has been initiated.

(b) Certificates of Education programmes for (i) Teachers of Reading and (ii) Teachers of the Deaf are being prepared for an early start.

(2) Extra-Mural Studies (special non-degree courses):

Programmes directly related to economic development and social welfare will have high priority. The technician/secondary school science teacher programme will begin by September 1983. The provision of medical in-service training for nurses and other health professionals, support for teacher training in business management studies and public administration are now being considered.

(3) Experimental Communications: It is anticipated that trials of other applications will be carried out. These might include linkage of campus computers, and occasional teleconferencing with other Universities and research centres.

It is expected that particular attention will be paid to agricultural applications.

THE PRESENT STATUS

THE UWIDITE NETWORK

The original discussions with USAID centred on operations with small inexpensive ground stations each of which would communicate with the others with costs independent of distance. However several difficulties arose, including:

1. the limited funds available;

2. the only readily available satellite - NASA's ATS-3 - has an uncertain lifetime due to funding problems;

3. it is not presently possible to use the powerful US domestic satellites for international programmes.

The system instead involves the use of the commercial carriers. There are presently five dedicated teleconferencing rooms: one on each of the campuses and one each at the University Centres in St. Lucia and Dominica. Each is connected to the appropriate international gateway via leased four wire telephone lines. Jamaica is linked to the Eastern Caribbean via satellite, while the Eastern Caribbean countries are linked by tropospheric scatter and microwave radio. St. Lucia is the central distribution system.

EQUIPMENT

The USAID grant provides for audio-only equipment. At each site there are six micophones and two speakers, a convenor, a telephone handset, and termination equipment which provides switching capabilities for the peripherals and allows a private line capability for two or more sites. For the discussion of confidential matters such as examinations each Campus has purchased a scrambler.

Slow-scan television has been ordered for each site. This will allow the transmission of visual information, including for example medical x-ray films. Television cameras, video recorders, monitors and editors have been purchased for the production of video-cassettes; playback equipment will be needed for some of the sites.

Other equipment - telewriters, facsimile and a micro-computer network - are under consideration. The European Development Fund has agreed to the supply of some such items for the St. Lucia and Dominica sites.

MAINTENANCE AND TRAINING

The various local and international carriers - Barbados Telephone Company, Jamaica Telephone Company, Trinidad Telephone Company, Cable and Wireless, Jamintel and Textel are responsible for the maintenance and performance of the normal communications systems. Audio equipment was installed by Teleconsult with the assistance of local technicians during February/March 1983. Some of the University's electronics technologists are responsible on each campus territory for the installation, checking and maintenance of peripheral equipment and the testing of system performance.

Arrangements have not yet been completed for maintenance on the non-campus sites but hopefully this will be brought to a conclusion shortly. Training of users, technicians and producers of print, audio, and audio-visual materials is underway.

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Several University staff have visited distance teaching centres all over the world to obtain information on distance teaching programmes and teleconferencing networks. Additional training of this sort is envisaged. Local training and seminars have been carried out at various times and more of these are planned, some making use of the system. This training includes teleconferencing facilities and procedures and also academic matters such as methods of distance teaching, curricula, preparation of materials, and evaluation of programmes.

TECHNICAL ASSISTANCE

Technical assistance is being provided through the Academy for Educational Development - largely training - and by Teleconsult for technical matters. Both are US based organizations. AED maintained a field office on the Mona campus during the first year of operation, to assist in implementation and initial training activities. This office was closed on March 31, 183.

EVALUATION

Evaluation of the project has been sub-contracted by USAID to a US based organization, Abt Associates Inc..

PRESENT USES OF THE UWIDITE NETWORK

The UWIDITE network became operational at the beginning of March. Many uses have already been made of the system. These include departmental teleconferences, consultation of a Ph.D. student of Mathematics at Mona with her Academic Supervisor in Trinidad, and teaching. Despite some technical difficulties, part of the teething pains expected in the first few weeks of operation, overall response by users has been good; enthusiasm is high and will only grow with increasing use.

A major user has been The Regional Preschool Child Development Centre which has begun a programme in Dominica, St. Lucia, Barbados and Jamaica to:

(a) improve the skills and increase the number of trainers in Early Childhood Education;

(b) develop a training module as a prototype for others in a variety of content areas.

(c) test a new approach to meeting training needs in the region.

The first module , "Principles of Training", is directed primarily at persons who are presently functioning as trainers, and those individuals who are not presently performing training duties, but who are sufficiently knowledgeable to become trainers in the field. The duration of this module will be twenty hours.

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Tutorials for Challenge Examination students in St. Lucia and Dominica are being offered in Accounting, Sociology, and Economics from Mona, St. Augustine and Cave Hill respectively.

PROGRAMMES BEING PREPARED

The present programmes leading to Certificates of Education for Teachers of the Deaf and for Teachers of Reading are being adapted for distance teaching. The entry requirements and standards will be the same as for the programmes now being offered on the Mona campus. The distance courses will be in-service and of about one calendar year in duration. The interactive network will be supplemented by audio, audio-visual and print materials. Local supervisors are being identified in each territory for each course.

It is estimated that the actual interactive time using audio, supported by slow scan television as required, is expected to be about one third of the contact hour of the full time courses as students will receive much of the content in study guides, work books, audio and video cassettes. For the Certificate of Education f,or Teachers of the Deaf video tape material on (1) Sign language, (2) Audiological assessment and (3)

Secondary School Teachers/Science Teachers. Preliminary work for development of programmes aimed at upgrading the skills of school science technicians in the five participating countries began in January 1983. Programmes will also be mounted for teachers. Teaching should begin in Sepember 1983. Basic courses in the following areas are proposed:

1. Laboratory Safety.
2. General Laboratory Management.
3. Preparation of Solutic. s.
4. Glassware, including care and cleaning.
5. Simple electricity.
6. Instrumentation.

Other potential users

Apart from the above areas of programme development, enquiries have been made from the Director of the Law School and various departments of the Faculty of Medicine on the possibility of developing continuing education programmes incorporating the UWIDITE network. The Faculty of Agriculture is also investigating ways of using the system. Regional organizations such as CXC, CARICOM and CARDI have been invited to consider the use of the network.

PROJECT ADMINISTRATION

The Director of the project is PVC Gerald Lalor. PVC Max Richards is the Campus Co-ordinator for St. Augustine and Dr. Keith Hunte is the Campus Co-ordinator for Cave Hill. The non-campus sites are the responsibility of the local Resident Tutors. The Project Office is located on the Mona campus and is presently staffed with two Project Officers. Until recently, the Academy for Educational Development in Washington supplied a Field Officer.

The Project Office is responsible for co-ordination of all sites for all matters relating to the Project i.e. scheduling conferences, technical co-ordination, administrative arrangements for educational programmes (e.g. registration of students, distribution of materials), co-ordination of arrangements for training staff, production of materials, public relations and encouraging use of the system.

The Campus Co-ordinators are responsible for the co-ordination of the work on the campus site including as necessary arranging the provision of technical assistance to the non-campus sites. The campus co-ordinator is also the liaison between the Project Office and the Campus and the liaison with local governments and telecommunicatons authorities as necessary. The co-ordinators are members of the Advisory Committee.

ADVISORY COMMITTEE

The Vice Chancellor has appointed an Advisory Committee which serves as a conduit for information and feedback between the University and the project; advise on the structure and content of the programmes; and will contribute to the evaluation and planning of subsequent operational service.

The Advisory Commitee, chaired by PVC Lalor, the Deans of those Faculties presently involved in UWIDITE, the Administration of each of the campuses; the Planning Unit; the Extra-Mural Department, and the Bursary.

The Advisory Committee meets regularly at intervals of about three months. The network will be used as necessary for consultations between meetings.

CONCLUSIONS AND SUGGESTIONS

UWIDITE is a bold new venture to apply modern but mature technologies to the educational problems of small states. It promises to:

1) provide a new training option when for reasons of scale other options appear economical.

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2) transform the quantity and quality of outreach, consultation and services which the University and other regional bodies can provide.

3) improve many aspects of university administration.

UWIDITE is presently being funded almost entirely from external funds although it is a great pleasure to acknowledge grants of EC$18,000 and $15,000 from the Dominican and St. Lucian Governments respectively. At the present level of operations UWIDITE will cost some US$300,000 per year of which over US$110,000 is needed for the leased lines. But full funding is only available for two years which is too short a time to establish the system and perform the necessary experiments and evaluation. Funds must therefore be sought quite urgently to:

1) ensure the continuation of the work throughout the next triennium;

2) expand the system gradually starting perhaps with Antigua to cover more countries;

3) provide more than one site in certain territories.

But there are ways in which Ministers of Education could provide support immediately. These include:

a) day release for selected students;

b) staff-time and support services to UWIDITE;

c) support the cost of book/audio-visual materials on a per capita student basis;

d) help to provide audio-visual equipment for student use.

It may be that funds which are already available from various overseas agencies could be applied to the support of training on the UWIDITE system.

And finally, Governments could examine their own priorities for training and continuing education to help shape the direction of the UWIDITE experiment.

INTERACTIVE DISTANCE TEACHING

Interactive distance teaching is similar in many ways to teaching in a face-to-face setting, but successful distance educational programmes are more than merely a broadcast of a traditional classroom situation.

Certain teaching strategies have been found in other countries to assist in making effective use of this largely interactive audio medium. A synopsis of some of these may be useful for those who will teach on the UWIDITE system.

HUMANIZING THE EXPERIENCE AND GROUPING THE PARTICIPANTS

The creation of an atmosphere which focuses on the importance of the individual and overcomes distance in generating group rapport is most important, since the members of the listening groups will be dispersed over five sites and may never meet in person. American and British studies suggest that group rapport can be enchanced by:

(a) Including a picture of the lecturer(s) and brief biography(ies) to be handed out before the first programme in each series;

(b) Encouraging participants to identify themselves and responding to their questions or comments by name;

(c) Try to form a mental picture of what it is like to be at one of the locations and communicating directly to a group of individuals rather than to an "audience out there";

(d) Devising a method by which participants are invited to share information with or ask additional questions of the instructor if programme time runs out e.g. (1) Scheduling time on the network to meet students on a one-to-one basis to discuss specific questions (2) Asking students to write in questions.

(e) Encouraging group discussion;

(f) Use whatever means you find effective to let participants know that two-way communication is available.

PREPARATION OF COURSE MATERIALS

A considerable amount of advance preparation is usually suggested for distance teaching. Materials (such as written texts, student guides, charts and other graphics; written or taped course commentaries; tape/slide sequences; audio or video cassettes) should be decided, prepared as necessary and available to students in advance of teaching sessions.

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In planning courses, therefore, sufficient time must be allocated for production and distribution of materials. A minimum lead time of three months may be required for production and a further one mont for distribution. Assistance in the production and distribution of print, audio and audio-visual materials can be provided by expertise on the campus or in other ways through the Project or Campus Offices.

ENCOURAGING DISCUSSION

One major strength of the medium is that it is interactive, but getting discussion started often presents difficulties. The ways of initiating discussion on the system are no different from those with which you are familar. These include:

(a) Asking direct questions of particular participants;

(b) Using information about the participants (e.g. occupation, personal experience) to help lead into the discussion;

(c) Asking participants at a particular site to work together preparing an answer to a specific question either during the session or for the next week's session, thus building discussion for the next programme;

(d) Highlighting questions: Prepare a list of questions which summarise the main ideas for each session, to be distributed with course materials. Use this list to begin discussion by asking group members to select a question specific to each programme to be discussed in greater depth.

(e) Student presentation of reports, case studies, etc.;

(f) Integration of aduio-visual material.

MAKING LISTENING EASIER

Many persons find it difficult to concentrate on an audio message for much more than 12-15 minutes without a break, however brief.

There are a variety of techniques to improve interest in order to stop student mind-drift. Varying pace, voice or topic are some familiar ones. Particularly effective with interactive distance teaching are:

(a) Structuring 10-15 minute lectures followed by question and discussion period of similar length;

(b) Substituting a panel discussion with varied voices and ideas in place of a single lecturer;

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(c) Giving a preview of the lecture in the form of a short, general overview, outlining the various parts of the message and how it will be organised. This helps students in their own understanding and remembering process;

(d) Repetition and summary of main points help individuals to remember important points;

(e) Providing print back-up for the message: an outline, some illustrative brochures, or even a detailed workbook. Print reinforces what is heard and is a permanent record for review purposes.

Of course, instructors will develop individual teaching styles for effective use of the network.

CONCLUSION

Interactive distance teaching has been a success in many University programmes, and has proven to be effective way of transmitting knowledge.

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UWIDITE

DEVELOPING STUDY GUIDES AND WORKBOOKS FOR PROGRAMMES

The UWIDITE Project Office provides the following services for programmes being developed involving the network.

1. Assist in developing proposals for programmes. An important consideration in developing a programme for the UWIDITE system is whether any type of University qualification or credit towards a degree will be offered on successful completion of the course. If this is to be the case, approval of (i) Faculty and (ii) UAC will have to be obtained.

2. Have drafts typed and circulated for editing to persons designated by Faculty Head. These will be done on a word processor on letter size pages.

3. Arrange for production of materials (i.e. print, audio, and visuals). The Project Office will put Faculty in contact with producers of audio and audio-visual materials and also monitor progress.

4. Distribute programme materials to sites. If there is sufficient lead-time (e.g. 1 month), these will be mailed. Otherwise couriers will be used. The Project Office will also arrange for return of material from students to Faculty.

The UWIDITE network is only one medium in the transfer of knowledge. It will offer students the opportunity to confer with

instructors and peers. In developing programmes, preparation of print, audio, audio-visual and visual materials will be required.

Students will need instructions for using the materials which will be sent to them. The following guidelines can assist in the preparation of study guides and workbooks which form part of the total distance teaching programme.

GENERAL INTRODUCTION

A. Welcome to programme and UWIDITE, explaining the network and how it fits into the total programme.

B. Hints on how to successfully complete the course of study.
   - plan study time
   - stick to plan
   - communicate problems

C. Short introduction of lecturer(s), possible inclusion of photograph(s). Also local supervisors and their role.

INTRODUCTION TO COURSE

D. Introduction to subject
   - purpose, objective, who directed at, content to be covered, order in which covered.

E. List of textbooks required and additional reading. Where they may be obtained.

F. Other learning resources to be used in the programme (e.g. Audio or Video tapes), and how and when they will be used.

G. The teleconference: How it will be used in the course of study. (See attached for suggestions).

DEVELOPMENT OF COURSE UNITS

H. The objectives of each lesson should be clearly defined. Necessary reading or other learning resources should be indicated and at what point they should be used.

I. Preparation of assignments: Interspersed throughout programme. To be completed at what intervals or what time periods? Handed in to whom (local supervisor, Resident Tutor, or mailed in to campus)? Typed or hand written. Does course work count for any percentage of the final mark? Should registration number be put on assignments?

J. In developing the work material, it should be borne in mind that experience has shown that the first lesson of the course and possibly the second are of primary importance in getting and keeping students interested in the course. It is therefore recommended that these should be made as easy as possible to give the student an immediate feeling of accomplishment. The more

difficult units should be placed towards the middle and end of the course.

Another way of getting the interest of the student is to begin with a pre-test for the student to do before getting into the material. At the end of the lesson a post-test could be provided for comparison. Self assessment should be built in throughout each lesson. Answers for each test should be provided.

K. Final examination: What format will this take?

L. Time allowance for completion of the course.

M. Certification.

If the programme has local supervisors/co-ordinators or tutors, guidelines will have to be provided for them, e.g. liaison, receiving, distributing and collecting information, material, assignments, classroom co-ordination, administrative functions.

They will also need to know what is expected of them for each session. Meetings with local supervisors can be scheduled in the UWIDITE network if not held face-to-face.